04.0   COMMUNICATION SYSTEMS II

Prerequisites: Fundamentals of Technology
Communication Systems I

Communication Systems II uses the skills and insights gained from Communication Systems I. Students develop detailed and integrated communication projects and concepts. Students produce a variety of technical presentations using telecommunications, computer applications, graphics, and photography. This course is designed for students planning to enter business, education, marketing, sales, and advertising or planning to major in science, engineering, or technical fields related to communications.

PROGRAM TASK LISTING EFFECTIVE DATE: June 30, 1995

PROGRAM AREA: Technology Education

PROGRAM TITLE: Communication Systems II

IDAHO CODE NUMBER: TE 1952

04.01   Demonstrate the ability to work safely with a variety of technologies.

04.02   Demonstrate interpersonal skills as they relate to the workplace.

04.03   Identify and apply methods of information acquisition and utilization.

04.04   Apply basic skills in communications, mathematics, and science appropriate to technological content and learning activities.

04.05   Demonstrate and apply design/problem-solving processes.

04.06   Express an understanding of technological systems and their complex interrelationships.

04.07   Demonstrate the ability to properly identify, organize, plan, and allocate resources.

04.08   Discuss individual interests and aptitudes as they relate to a career.

04.09   Demonstrate employability skills and habits.

04.10   Demonstrate an understanding of entrepreneurship.

04.11   Make an informed and meaningful career choice.

04.12   Demonstrate verbal communication skills.

04.13   Demonstrate technical knowledge and skills relating to information processing technologies.

04.14   Demonstrate technical knowledge and skills relating to graphic communications technology.

04.15   Demonstrate technical knowledge and skills relating to electronic communications technology.

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04.01 DEMONSTRATE THE ABILITY TO WORK SAFELY WITH A VARIETY OF TECHNOLOGIES--
The student will be able to:

1.   Select appropriate tools, procedures, and/or equipment needed to produce a product.
2.   Demonstrate the safe usage of appropriate tools, procedures, and operation of equipment needed to produce a product.
3.   Demonstrate knowledge required to maintain and troubleshoot.
4.   Follow laboratory safety rules and procedures.
5.   Demonstrate good housekeeping at work state and within total laboratory.
6.   Identify color-coding safety standards.
7.   Explain fire prevention and safety precautions and practices for extinguishing fires.
8.   Identify harmful effects/potential dangers of familiar hazardous substances/devices to people and the environment.

04.02 DEMONSTRATE INTERPERSONAL SKILLS AS THEY RELATE TO THE WORKPLACE--
The student will be able to:

1.   Perform roles in a student personnel system or in the Idaho Technology Student Association (ID-TSA).
2.   Participate as a member of a team.
3.   Teach others new skills.
4.   Identify skills needed to serve clients/customers.

5. Demonstrate leadership skills.
6. Describe strategies necessary for negotiating agreements.
7. Demonstrate the application of skills necessary to work with people of diverse backgrounds.
8. Form an understanding and appreciation for work after listening to or observing technology workers.
9. Form an understanding and appreciation for work after participating in a simulated technology group project in the laboratory.
10. Form an understanding and appreciation for the roles and work of co-workers.

04.03 <u>IDENTIFY AND APPLY METHODS OF INFORMATION ACQUISITION AND UTILIZATION</u>-

The student will be able to:

1. Define terms related to computers.
2. Identify and describe methods of information acquisition and evaluation.
3. Discuss advantages and disadvantages in the application of technologies.
4. Produce a plan to organize and maintain information relevant to emerging technologies.
5. Comprehend and communicate information relevant to emerging technologies.
6. Demonstrate the use of computers to process information.

04.04 <u>APPLY BASIC SKILLS IN COMMUNICATIONS, MATHEMATICS, AND SCIENCE APPROPRIATE TO TECHNOLOGICAL CONTENT AND LEARNING ACTIVITIES</u>--
The student will be able to:

1. Use the features of books and reference materials, such as table of contents, preface, introduction, titles and subtitles, index, glossary, appendix, and bibliography.
2. Read and follow complex written directions.
3. Find, understand, and apply information from a variety of sources (books, manuals, newspapers, periodicals, directories, reference works, computer printouts, and other printed matter or electronic sources such as video display terminals).
4. Use and expand general and specialized vocabulary (including abbreviations, acronyms, and concepts) as appropriate to subject areas studied at the grade level.
5. Write Standard English sentences with correct:
   - sentence structure;
   - verb forms;
   - punctuation, capitalization, possessives, plural forms, and other matters of mechanics;

           - word choice and spelling.

6. Answer and ask questions coherently and concisely, and follow spoken instructions.
7. Identify and comprehend the main and subordinate ideas in lectures and discussions, ask questions to clarify information heard, and report accurately what others have said.
8. Perform with accuracy the computations of addition, subtraction, multiplication, and division using natural numbers, fractions, decimals, and integers.
9. Make and use measurements in both traditional and metric units.
10. Formulate and solve problems in mathematical terms, selecting appropriate approaches and tools (mental computation, trial and error, paper-and-pencil techniques, calculator, and computer).
11. Solve work-related problems involving the basic arithmetic operations using whole numbers, fractions, decimals, and percents.
12. Describe the role of observation and experimentation in the development of scientific theories.
13. Gather scientific information through skills in laboratory, field, and library work.
14. Draw conclusions or make inferences from data.
15. Apply basic scientific/technical solutions to the appropriate problems.

04.05 <u>DEMONSTRATE AND APPLY DESIGN/PROBLEM-SOLVING PROCESSES</u>--
The student will be able to:

1. Describe and explain steps in the design/problem-solving process.
2. Propose solutions to given problems.
3. Design and implement the optimal solution to a given problem.
4. Document each step of the design/problem-solving process.
5. Demonstrate "Brainstorming" as a process to solve problems.
6. Define "critical thinking" and its value in the problem-solving process.

04.06 <u>EXPRESS AN UNDERSTANDING OF TECHNOLOGICAL SYSTEMS AND THEIR COMPLEX INTERRELATIONSHIPS</u>--
The student will be able to:

1. Demonstrate knowledge of how social, organizational, and technological systems work.
2. Explore methods used to monitor and correct performance of technological systems.
3. Design and implement an optimal solution to a given problem.
4. Outline major historical technological developments or events.
5. Identify recent advances in technology.
6. Explain problem-solving roles of technology.
7. Forecast a technological development or event.
8. Define technology.

04.07 <u>DEMONSTRATE THE ABILITY TO PROPERLY IDENTIFY, ORGANIZE, PLAN, AND ALLOCATE RESOURCES</u>--
The student will be able to:

1. Demonstrate the ability to select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
2. Use or prepare budgets, make forecasts, keep records, and make adjustments to meet objectives.
3. Demonstrate the ability to acquire, store, allocate, and use materials or space efficiently.
4. Display knowledge of the efficient use of human resources.

04.08 <u>DISCUSS INDIVIDUAL INTERESTS AND APTITUDES AS THEY RELATE TO A CAREER</u>--
The student will be able to:

1. Describe individual strengths and weaknesses.
2. Discuss individual interests related to a career.
3. Identify careers within specific areas of technology.
4. Explore careers within specific areas of interest.

04.09 <u>DEMONSTRATE EMPLOYABILITY SKILLS AND HABITS</u>--
The student will be able to:

1. Identify employment opportunities.
2. Apply employment seeking skills.
3. Interpret employment capabilities.
4. Demonstrate appropriate work behavior.
5. Maintain safe and healthy environment.
6. Maintain businesslike image.
7. Maintain working relationships with others.
8. Communicate on the job.
9. Adapt to change.
10. Demonstrate knowledge of manufacturing.
11. Perform mathematical calculations.
12. Compile a portfolio.

04.10 <u>DEMONSTRATE AN UNDERSTANDING OF ENTREPRENEURSHIP</u>--
The student will be able to:

1. Define entrepreneurship.
2. Describe the importance of entrepreneurship to the American economy.
3. List the advantages and disadvantages of business ownership.
4. Identify the risks involved in ownership of a business.
5. Identify the necessary personal characteristics of a successful entrepreneur.
6. Identify the business skills needed to operate a small business efficiently and effectively.

04.11 <u>MAKE AN INFORMED AND MEANINGFUL CAREER CHOICE</u>--
The student will be able to:

1. Make a tentative occupational choice based on the information learned and interest developed in this course.
2. Review tentative occupational choices based on the information learned and interest developed in this course.

04.12 <u>DEMONSTRATE VERBAL COMMUNICATION SKILLS</u>--
The student will be able to:

1. Demonstrate verbal communication skills by giving directions to another person.
2. Demonstrate verbal communications skills by listening to and following directions from another person.

04.13 <u>DEMONSTRATE TECHNICAL KNOWLEDGE AND SKILLS RELATING TO INFORMATION PROCESSING TECHNOLOGIES</u>--
The student will be able to:

1. Describe several information processing devices.
2. Chart the various processes involved in transmission of sound, video and data.
3. Demonstrate technical skills by processing information with a computer, peripherals, and applications.

04.14 <u>DEMONSTRATE TECHNICAL KNOWLEDGE AND SKILLS RELATING TO GRAPHIC COMMUNICATION TECHNOLOGIES</u>--
The student will be able to:

1. Describe several graphic communication processes.
2. Create a multimedia presentation.
3. Demonstrate technical skills relating to graphic communications using a computer, peripherals and applications.
4. Demonstrate traditional drafting skills.
5. Demonstrate technical skills relating to continuous tone photography.
6. Describe the various printing processes used in industry.

04.15 <u>DEMONSTRATE TECHNICAL KNOWLEDGE AND SKILLS RELATING TO ELECTRONIC COMMUNICATION TECHNOLOGIES</u>--
The student will be able to:

1. Describe several electronic communications devices.
2. Chart the various electronic communication systems involved in transmission of sound, video, and data.
3. Demonstrate technical skills of transmission and reception of electronic communications.
4. Send and receive data via a computer network.
5. Explore emerging technologies such as lasers, fiber optics, etc.